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(54) **AIRCRAFT POWERPLANT WITH MOVEABLE NOZZLE MEMBER**

(75) Inventors: **Kenneth M. Pesyna**, Carmel, IN (US); **Bryan Henry Lerg**, Westfield, IN (US); **Michael Abraham Karam**, Plainfield, IN (US)

(73) Assignee: **Rolls-Royce North American Technologies Inc.**, Indianapolis, IN (US)

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(58) **Field of Classification Search**

CPC F02K 3/075; F02K 3/077

See application file for complete search history.

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Primary Examiner — Craig Kim

(74) *Attorney, Agent, or Firm* — Barnes & Thornburg LLP

(57) **ABSTRACT**

A gas turbine engine system is disclosed which includes a core passage and a bypass passage which can be configured as a fan bypass duct or a third stream bypass duct. The core passage and bypass passage are routed to flow through a nozzle before exiting overboard an aircraft. The nozzle includes moveable members capable of changing a configuration of the nozzle. In one form the moveable members are capable of changing throat area for portions of the nozzle that receive working fluid from the core passage and the bypass passage. The bypass passage can include a branch. In one form the branch can include a heat exchanger. The bypass passage can also provide cooling to one or more portions of the nozzle, such as cooling to a deck of the nozzle.

27 Claims, 9 Drawing Sheets